expectancy from other medical conditions, who are unlikely to benefit from tight metabolic control, and in these patients the risk of hypoglycemia occurring outweighs the potential benefits. It is essential that physicians weigh the benefits and risks and tailor a therapeutic regimen to the needs of individual patients.

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REFERENCES

1. Service FJ: Hypoglycemias. West J Med 1991 Apr; 154:442-454

2. Feingold KR: Hypoglycemia: A pitfall of insulin therapy—Medical Staff Conference, University of California, San Francisco. West J Med 1983; 139:688-695

3. The DCCT Research Group: Diabetes Control and Complications Trial (DCCT): Results of feasibility study. Diabetes Care 1987; 10:1-19

4. Basdevant A, Costagliola D, Lanöe JL, et al: The risk of diabetic control: A comparison of hospital versus general practice supervision. Diabetologia 1982; 22:309-314

5. Golden MP, Ingersoll GM, Brack CJ, Russell BA, Wright JC, Huberty TJ: Longitudinal relationship of asymptomatic hypoglycemia to cognitive function in IDDM. Diabetes Care 1989; 12:89-93

6. Ratner RE, Whitehouse FW: Motor vehicles, hypoglycemia, and diabetic drivers. Diabetes Care 1989; 12:217-222

7. Frier BM, Matthews DM, Steel JM, Duncan LJP: Driving and insulin-dependent diabetes. Lancet 1980; 1:1232-1234

8. Tordjman KM, Havlin CE, Levandoski LA, White NH, Santiago JV, Cryer PE: Failure of nocturnal hypoglycemia to cause fasting hyperglycemia in patients with insulin-dependent diabetes mellitus. N Engl J Med 1987; 317:1552-1559

9. Perriello G, De Feo P, Torlone E, et al: The effect of asymptomatic nocturnal hypoglycemia on glycemic control in diabetes mellitus. N Engl J Med 1988; 319:1233-1240

10. White NH, Skor DA, Cryer PE, Levandoski LA, Bier DM, Santiago JV: Identification of type I diabetic patients at increased risk for hypoglycemia during intensive therapy. N Engl J Med 1983; 308:485-491

11. Casparie AF, Elving LD: Severe hypoglycemia in diabetic patients: Frequency, causes, prevention. Diabetes Care 1985; 8:141-145

12. Simonson DC, Tamborlane WV, DeFronzo RA, Sherwin RS: Intensive insulin therapy reduces counterregulatory hormone responses to hypoglycemia in patients with Type I diabetes. Ann Intern Med 1985; 103:184-190

13. Amiel SA, Tamborlane WV, Simonson DC, Sherwin RS: Defective glucose counterregulation after strict glycemic control of insulin-dependent diabetes mellitus. N Engl J Med 1987; 316:1376-1383

14. Amiel SA, Sherwin RS, Simonson DC, Tamborlane WV: Effect of intensive insulin therapy on glycemic thresholds for counterregulatory hormone release. Diabetes 1988; 37:901-907

15. Arias P, Kerner W, Zier H, Navascues I, Pfeiffer EF: Incidence of hypoglycemic episodes in diabetic patients under continuous subcutaneous insulin infusion and intensified conventional insulin treatment: Assessment by means of semiambulatory 24-hour continuous blood glucose monitoring. Diabetes Care 1985; 8:134-140

16. Widom B, Simonson DC: Glycemic control and neuropsychologic function during hypoglycemia in patients with insulin-dependent diabetes mellitus. Ann Intern Med 1990; 112:904-912

An Agenda for Public Health in the 1990s

THESE ARE EXCITING and dynamic times in public health, preventive medicine, and health care in general. Profound changes are underway in health care services delivery. We have entered a new era of consciousness and concern about the healthfulness of the food we eat, the water we drink, the air we breathe, and the overall global environment. There are new and frightening problems before us such as AIDS and drug abuse, while long-recognized health problems such as injury control and inadequate prenatal and children's care continue to cry out for attention. And new health care technology and scientific advances in genetic engineering and other fields are presenting unprecedented moral and ethical dilemmas.

It seems as though there has never been a time when there were more challenges for public health and more opportunities for public health personnel to unite with medical practitioners and other human service professionals. While the list of issues and problems for public health to focus on is long, I think much of the public health agenda of the coming decade will focus on five particular areas.

The first of these problem areas is substance abuse. I would agree with those who have called drug abuse today's number one public health problem in California—and probably in the United States. Drug abuse is tearing apart the very fabric of society in many communities and is causing a skyrocketing increase in illness and death. Examples of this are the following:

- Surveys done by the California Department of Health Services in 1988 revealed that 20% of newborns admitted to neonatal intensive care units in California that year had problems related to maternal drug abuse. The estimated cost for the initial hospital care only of those more than 8,000 infants was more than $40 million. Indications are that this situation has not improved.
- The incidence of congenital syphilis has increased about 500% in the past five years, most of which can be related to the use of cocaine.
- The major cause of new cases of AIDS in many parts of the country, and increasingly so in California, is drug abuse. This disproportionately affects minority ethnic groups. New AIDS cases related to drug abuse are five times more common in African Americans than among other ethnic groups in California.

There are other statistics that could be cited; suffice it to say that drug abuse is causing protean untoward public health effects.

While most of the attention in recent years has focused on cocaine, heroin, and methamphetamines, we should not forget that the first drug of abuse and the first drug of addiction for our children is tobacco. We now know that tobacco is every bit as addictive as heroin or cocaine, and we should view tobacco for what it is—legalized dope. Tobacco use kills more than 40,000 Californians every year—far more than that of cocaine or heroin—and it costs California more than $25 million a day in medical expenses and lost productivity.

If we are going to wage a war on drugs, we need to begin with a war on tobacco. I am pleased that we have initiated one in California.

The second major public health challenge of the 1990s—for both California and the rest of America—is assuring the availability of access to basic health care for all of our citizens. It is ironic that whereas many Americans receive the most technologically advanced and the best medical care available any place in the world, a large and growing number of our citizens go unattended, having no or inadequate access to even the most basic health care services. This paradox of medical need amidst medical plenty has developed over many years as a result of complex and powerful forces that cannot be easily changed. But change must occur!

As a society, we should set a goal that by the end of this decade, if not sooner, *all* Americans should be guaranteed access to at least basic health care.

A third area of particular concern for public health in the 1990s will be genetics and genetic-related diseases. Genetic engineering and techniques such as in vitro fertilization and chorionic villus sampling, as well as other new and rapidly developing technologies, will have a major effect on public

health and health care in the future. For example, DNA screening for the probability of heart disease, certain cancers, muscular dystrophy, or cystic fibrosis developing is nearing potential wide-scale application. The effect of these new technologies on traditional public health programs will be profound. This whole area is about to bloom.

A fourth major public health challenge of the 1990s has to do with our burgeoning population, of California, the United States, and, most important, of our planet. In many places in the world today, unchecked population growth is surpassing the ability to provide for even the most basic human needs. Closer to home, gridlock on the freeways, increasing social violence, and crowded classrooms are but some of the manifestations of the difficulty we are having dealing with population growth, even in a place as affluent as California.

The increasing struggle to meet basic human needs with an ever shorter supply of natural resources intensifies the threat of local, regional, or even global armed conflict. When these conditions are combined with 24-hour-a-day electronic media coverage of terrorist attacks, political coups, and mass murders that further depersonalize human beings and serve to normalize interpersonal violence, there is clear reason for concern.

Also of increasing concern is the potential for continued unchecked population growth to present some unique public health problems. For example, there is likely to be increased vulnerability of the human population to epidemic diseases as the number of people increases, as crowding becomes more severe, as environmental conditions deteriorate, and as malnutrition and the resultant population immunocompromise worsen. These conditions combined with high-speed transportation and an ever more cosmopolitan world provide the conditions favorable for the rapid spread of ancient and novel plagues.

The fifth major public health challenge of the 1990s is the problem of ecosystem health. Every day we are made more aware of problems related to the earth's stressed ecosystem. Global warming, stratospheric ozone destruction, marine pollution, acid rain, and massive tropical deforestation all attest to a deteriorating global environment. In the past decade, we have learned how difficult and expensive it is to remediate environmental transgressions once committed. While there is much yet to learn about both preventing and remedying these problems, they need to be vigorously addressed now.

Yes, we have many complex and tough public health and health care problems to deal with in the 1990s—problems that go to the roots and fabric of our chemical-intensive, electronic-driven, sophisticated late-20th-century society. They are problems that we have created and that we can still fix.

If we were pessimistic, we might see nothing but problems because the challenges seem to be so great. By the same token, though, the opportunities are great. We could approach these problems pessimistically, seeing only the difficulties, or we can approach them optimistically, seeing opportunities within the difficulties. It's our choice. It's our world. We have to ask ourselves what kind of future we want, and then we have to go out and create it.

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